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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,700	08/10/2001	Takefumi Sawada	381KA/50302	4247

7590

02/04/2003

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EXAMINER

SAN MARTIN, EDGARDO

ART UNIT PAPER NUMBER

2837

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/925,700

Applicant(s)

SAWADA ET AL.

Examiner

Edgardo San Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 August 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,9-11 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 2-8 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The submitted copy of the abstract for the Japanese Patent JP 11-055994 does not correspond to the submitted patent application number, which is JP 9-221167. The submitted abstract corresponds to a Japanese patent application number JP19870313221.

### ***Drawings***

2. The drawings are objected to because the function boxes in Figure 17 should be labeled as of the element, physical function or mathematical function that they represent.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

**Specification**

3. The disclosure is objected to because of the following informalities:

- Page 11, Lines 7 and 29 should read - - ( $\alpha$  -  $\beta$  axes) - - instead of "(axes)";
- Page 12, Line 3 should read - - 30 - - instead of "9";
- Page 12, Line 4 should read - -  $iu^\wedge$  - - instead of "iu" so it be in accordance with the Drawings;
- Page 12, Line 5 should read - -  $iv^\wedge$  - - instead of "iv" so it be in accordance with the Drawings;
- Page 12, Lines 25 and 30 should read - - 30 - - instead of "9";
- Page 13, Line 13 should read - - position  $\theta^\wedge$  - - instead of "position ^";
- Page 15, Line 17 should read - - (-) - - instead of "( )";
- Page 17, Line 1 should read - - (- direction) - - instead of "( direction)";
- Page 18, Lines 3 and 9 should read - - pole position  $\theta^\wedge$  - - instead of "pole position ^";
- Page 19, Lines 19, 26 and 30 should read - - position  $\theta^\wedge$  - - instead of "position ^";
- Page 20, Line 2 should read - - pole position  $\theta^\wedge$  - - instead of "pole position ^";
- Page 23, Line 11 should read - - 44 - - instead of "14";

- Page 23, Line 18, should read - - 44 - - instead of "41";
- Page 30, Lines 2 and 10 should read - - changing rate  $\Delta\theta$  - -;
- Page 31, Line 20 should read - - steering gear - - instead of "steeling gar".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9 – 11, 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "so on" in claims 9 – 11, 13 and 14 is a relative term which renders the claims indefinite. The term "so on" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. All the parameters that the fault detecting means will detect should be specified.

5. Claim 14 recites the limitation "said polarity discriminating means" in Line 3.

There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Nakada et al. (JP 2000134976 A).

With respect to Claim 1, Nakada et al. teach a motor control apparatus for controlling a voltage applied to an alternating current (AC) motor using a PWM signal, comprising magnetic position estimating means for detecting a current of the AC motor to estimate a magnetic pole position of the AC motor; and fault detecting means for detecting a fault in an estimated magnetic pole position of the AC motor (Fig.1; Abstract).

With respect to Claim 13, Nakada et al. teach wherein the fault detecting means shuts down an associated system when the fault detecting means detects a fault, the fault including oscillation and inversion of an estimated magnetic pole position (Abstract).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada et al. (JP 2000134976 A) in view of Kaneko et al. (US 5,994,870).

With respect to Claim 15, Nakada et al. teach the limitations discussed in a previous rejection, but fail to disclose the an electric vehicle equipped with a motor control apparatus.

On the other hand, Kaneko et al. teach an electric vehicle equipped with a motor control apparatus that controls the motor based on a detected pole position (Fig.1; Col.2, Line 38 – Col.3, Line 38).

It would have been obvious to a person with ordinary skill in the art to employ the Nakada et al. motor control system with the Kaneko et al. electric vehicle motor control design because the Nakada et al. system would detect any fault or failure in a pole position detection means and would help perform the proper adjustments to solve the failure and control the motor in a more efficient manner.

With respect to Claim 14, Kaneko et al. teach wherein a polarity discriminating means corrects the polarity to continue a control when a fault detecting means detects a fault (Col.11, Line 47 – Col.13, Line 5).

***Allowable Subject Matter***

8. Claims 2 – 8 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 9 - 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaneko et al. teach a synchronous motor-control apparatus and vehicle using the control apparatus, Kojima et al. teach an abnormality detecting system and abnormality detecting method for rotor position detection means, and motor control system, Yochihara teaches a method and apparatus for detecting abnormality in rotation sensor, Obara et al. teach a synchronous motor controller, Katayama et al.



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teach a method and device for diagnosing failure for motor rotational angle information, Masaki et al. teach a synchronous motor control device, electric motor vehicle control device and method of controlling synchronous motor, Kaneko et al. teach a motor control apparatus, and Masaki et al. teach a motor control device.

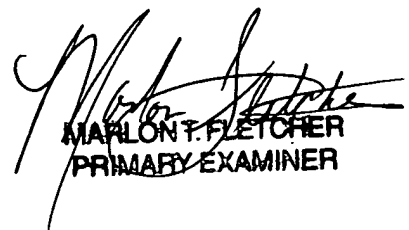
***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (703) 308-1050. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703) 308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Edgardo San Martín  
Patent Examiner  
Art Unit 2837  
Class 318  
January 24, 2003

  
MARLON T. FLETCHER  
PRIMARY EXAMINER